MUSST: Workshop on Multi-User Services for Social TV

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ABSTRACT
Social TV has been an active area of research for more than a decade now, but most research has focused on interaction between remote participants, either through direct communication or more indirect e.g. in the form of social recommendations. However, an issue that has been mostly neglected in social TV research is how to deal with multiple co-located users in the home. This workshop addresses that gap by investigating possible social TV services for multiple users in the home. The objective is to bring together researchers and practitioners working on different aspects of multi-user services for social television including multiple devices: user research, prototype design, technical implementation, system scalability, business models, etc.

Categories and Subject Descriptors
H.5.1 [**Information Interfaces and Presentation**]: Multimedia Information Systems, J.7 [**Computers in Other Systems**]: Consumer Products, H.4.3 [**Information Systems Applications**]: Communications Applications

General Terms
Measurement, Design, Economics, Experimentation, Human Factors, Standardization, Theory, Legal Aspects, Verification.

Keywords
Interactive Television, IPTV, Social TV, Multi-User Services

1. INTRODUCTION
The world of consumer devices has undergone drastic changes in the last couple of years, which has also had an impact on the interactive television landscape. While some research is already taking this multi-device context into account, little research has actually addressed the multiple user context. Currently, personalisation and recommendation algorithms do not work across devices and do not support a group of users. Group dynamics, such as new users entering or leaving the room are not considered either. As watching TV is often a group experience, this lack impedes service and content providers to introduce personalisation and tailored content recommendations in a Hybrid Broadcast Internet environment.

Several systems for multi-user interaction are currently being developed in the world of gaming, such as the Nintendo Wii [2] and the multimodal interface of the Microsoft Xbox Kinect [1]. These developments are not yet taken up in interactive television applications: there is no identification of individual users, nor is there personalisation of services based on such identification or context awareness.

Currently, the media industry is developing technologies for advanced personalised media services, like personalised channels, personal service composition, targeted advertising, presence and content recommendations [3]. An analysis of these use cases showed all of them assume personalisation aimed at a single individual user [4]. In research however, the multi-user context is being explored somewhat more. An example is an EPG implementation that featured multi-user policies and showed the combined channel-order preferences of users detected with RFID cards, with the most preferred channel by the group showing on top [5].

The most widely used approaches to content recommendations for single users are content based and collaborative filtering approaches, as well as combinations of these two. Hybrid recommender systems often combine collaborative and content based filtering to take advantage of the benefits of both techniques [6]. In the area of content recommendations for multiple users, the recommender system proposed by Shin & Woo generates recommendations for users by merging user profiles and combining their common interests [7]. More research is needed into the best solutions for multi-user recommendations.

Finally, the inclusion of so many varied services into the social TV space requires clever and scalable division of work between parts of the service implemented on the end-devices and parts implemented in the cloud.

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2. WORKSHOP TOPICS

The MUSST2013 workshop invites both researchers and practitioners from diverse backgrounds (user research, technical, business, ...) that work in the area of social and/or personalized interactive television services to submit position papers that address the following topics:

- Social TV applications supporting multiple co-located users
- Multi-user interaction with the TV using the remote control, second-screen devices, gestures or voice control
- Personalization and recommendation for multi-user households and groups
- Identification of multiple users in the living room (e.g. with voice or face recognition)
- System scalability for offering multi-user services to a large audience
- Division of these services between end devices and the cloud

We will invite the authors of the best papers of the workshop to extend their paper and submit it to a special section in the Elsevier Entertainment Computing Journal.

3. ORGANIZERS

David Geerts holds a PhD in Social Sciences at the KU Leuven, where he is research manager of the Centre for User Experience Research (CUO) at the faculty of Social Sciences. David is specialized in user-centered design and evaluation of ICT applications, with a special interest in social interactive television. He organized several workshops, special interest groups, and tutorials at international conferences on this topic (mainly at EuroITV2008-2012 and CHI2006-2012). David Geerts is member of IFIP TC14 Entertainment Computing and its WG6 on interactive television, is co-founder of the Belgian ACM SIGCHI chapter (CHI Belgium), is part of the EuroITV steering committee and was program chair of the EuroITV2009 conference.

Dr. M. Oskar van Deventer is TNO's senior scientist on media networking. His focus is on the realization of international standards and - research project. He is work package leader in the European HBB-Next project on next-generation Hybrid Broadcast Broadband (HBB). He is active contributor and editor of several ITU-T, ETSI and IETF standards, most recently on IPTV, media synchronisation and Content Delivery Networks (CDN) interconnection. He has won several international awards in the area of Mobile Gaming and he has achieved a Guinness World Record. His research current focus is on HBB and CDN. He is author of one book, more than 100 publications, over 50 patents applications, over 500 standardization contributions and several standards.

Christian Köbel is currently a PhD. student at Polytechnic University ISPJAE in Havana, Cuba. He received his diploma degree in Telecommunications from the University of Applied Sciences - Technische Hochschule Mittelhessen in Friedberg, Germany in 2008. Christian's research is centered on dynamic resource management in wireless ad-hoc networks. Currently he is working at the University of Applied Sciences as a research assistant on multi-device video/audio synchronization solutions within the HBB-NEXT framework project. Christian's research has a strong focus on innovative cross-layer systems in distributed network technologies, incorporating a global view on all involved network assets.

Bettina Heidkamp-Tchegloff coordinates multimedia research and development in EC and internal projects for RBB's Department of Production & Operation. She is currently Consortium Leader of HBB-NEXT and monitors RBB's activities in the EC co-funded projects 3D Vivant, Linked TV, FI-CONTENT. To date she has led eight EC projects in the area of ICT. Bettina Heidkamp-Tchegloff holds a master's degree in Media Studies, English and Modern History from Freie Universität Berlin. On completion of her professional journalistic training, she worked in journalism/PR and project management for a number of broadcast related EC co-funded projects before she joined ORB, RBB's predecessor.

4. ACKNOWLEDGMENTS

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